

# Contents

## Letters to the Editor

- Discovery of two bright low-redshift quasars by the Hamburg Quasar Survey  
*Groote, D., Heber, U., Jordan, S.* L1
- The discovery of interstellar carbon dioxide  
*d'Hendecourt, L.B., Jourdain de Muizon, M.* L5
- The probability of detecting absorption features in gamma-ray burst spectra  
*Melia, F.* L9
- High signal/noise  $^{13}\text{CO}$  observations of the bipolar outflow in L 1551  
*Fridlund, C.V.M., White, G.J.* L13
- The Serpens sources SVS4 and FIRS1: new results from infrared images  
*Eiroa, C., Casali, M.M.* L17
- Carbon stars with oxygen-rich circumstellar envelopes?  
*Zuckerman, B., Maddalena, R.J.* L20
- Carbon stars with oxygen-rich circumstellar envelopes!  
*de Jong, T.* L23

## Cosmology

- Detection of distant galaxy clusters  
*Cappi, A., Chincarini, G., Conconi, P., Vettolani, G.* 1
- A class of solutions in Newtonian cosmology and the pancake theory  
*Buchert, T.* 9
- Geometrical analysis of galaxy clustering: dependence on luminosity  
*Börner, G., Houjun Mo* 25
- Acquisition of angular momentum by tidal torques in expanding, spherical-symmetric density perturbations: an analysis of different approximations  
*Caimmi, R.* 29

## Extragalactic astronomy

- Star formation rate and gas surface density in late-type galaxies  
*Buat, V., Deharveng, J.M., Donas, J.* 42
- H I rotation curves of spiral galaxies. I. NGC 3198  
*Begeman, K.G.* 47

- (RN) The optical counterpart of the strong southern radio source PKS 1343-601 (13 S 6 A)  
*West, R.M., Tarengi, M.* 61
- The nature of the central source of the supernova remnant G 179.0+2.7  
*Fürst, E., Reich, W., Kühr, H., Stickel, M.* 66
- Electron-ion coupling in Compton-heated plasmas  
*Schmutzler, T., Lesch, H.* 71
- Dense gas in nearby galaxies. I. Distribution, kinematics and multilevel studies of CS  
*Mauersberger, R., Henkel, C.* 79

## Galactic structure and dynamics

- Galactic models with massive corona. I. Method  
*Einasto, J., Haud, U.* 89
- Galactic models with massive corona. II. Galaxy  
*Haud, U., Einasto, J.* 95
- Observations of the submillimetre integrated galactic emission from the South Pole  
*Pajot, F., Gispert, R., Lamarre, J.M., Peyturaux, R., Pomerantz, M.A., Puget, J.L., Serra, G., Maurel, C., Pfeiffer, R., Renault, J.C.* 107

## Formation, structure and evolution of stars

- Tidal evolution of close binary stars. II. Orbital circularization of late-type binaries  
*Zahn, J.-P., Bouchet, L.* 112
- The Kuwano-Honda's peculiar object (PU Vulpeculae) in 1983-1986  
*Belyakina, T.S., Bondar, N.I., Chochol, D., Chuvaev, K.K., Efimov, Y.S., Gershberg, R.E., Grygar, J., Hric, L., Krasnobabstev, V.I., Pirola, V., Poutanen, M., Savanov, I.S., Huovelin, J., Tuominen, I., Shakhovskaya, N.I., Shakhovskoy, N.M., Shenavrin, V.I., Shcherbakov, A.G.* 119
- Gamma-ray lines from radioactive nuclei produced in hydrostatic stellar burning phases  
*Prantzos, N.* 136

Possible optical identification of GB 791101 <i>Moskalenko, E.I., Popravko, G.V., Kramer, E.N., Shestaka, I.S., Karnashov, A.N., Nazarenko, V.V., Skoblikova, L.Ja., Lemeschenko, V.F., Nazarenko, S.V., Gorbanev, Ju.M.</i>	141	(RN) A search for H <sub>2</sub> O maser emission in the Serpens re- gion <i>Palla, F., Giovanardi, C.</i>	267
Gamma-ray emission from pulsars <i>Yongheng Zhao, Tan Lu, Keliang Huang, Jianlong Lu, Qiuhe Peng</i>	147	Near-infrared morphology of protoplanetary nebulae: the icy dust torus of Minkowski's Footprint (M1-92) <i>Eiroa, C., Hodapp, K.-W.</i>	271
Analysis of the optical light curve of the massive X-ray bi- nary LMC X-4 <i>Heemskerk, M.H.M., van Paradijs, J.</i>	154	Echelle observations of the high speed motions in the ex- treme bi-polar nebula He2-111 (PK 315 -0°1) <i>Meaburn, J., Walsh, J.R.</i>	277
The peculiar B[e] star MWC 623: a binary system with a Li- rich K star <i>Zickgraf, F.-J., Stahl, O.</i>	165	CO and IR in L 1228: extended bipolar molecular outflow and strongly self-absorbed <sup>12</sup> CO emission <i>Haikala, L.K., Laureijs, R.J.</i>	287
Properties of the components of the UZ Librae system <i>Grewing, M., Bianchi, L., Garrido, R.</i>	172	2-mm H <sub>2</sub> CO emission in the Sgr A molecular complex at the Galactic Center <i>Sandqvist, Aa.</i>	293
One-pole and two-pole X-ray emission in the AM Herculis binary BL Hydri <i>Beuermann, K., Schwöpe, A.D.</i>	179	The $\beta$ Pictoris circumstellar disk. IX. Theoretical results on the infall velocities of Ca II, Al III, and Mg II <i>Beust, H., Lagrange-Henri, A.M., Vidal-Madjar, A., Ferlet, R.</i>	304
Photometric variations of 46 Eridani and 210 G Eridani <i>Manfroid, J., Renson, P.</i>	187	High latitude molecular clouds: distances derived from ac- curate photometry <i>Franco, G.A.P.</i>	313
The relation between orbital and spin periods in massive X-ray binaries <i>Waters, L.B.F.M., van Kerkwijk, M.H.</i>	196	Monitoring of the SiO maser emission in W 51-IRS 2: evi- dence for high velocity cloudlets ejected from young stars? <i>Fuente, A., Martín-Pintado, J., Alcolea, J., Barcia, A.</i>	321
<b>Stellar atmospheres</b>		(RN) Discovery of a planetary nebula in the field of the open cluster NGC 6087 <i>Koester, D., Reimers, D.</i>	326
X-ray light curves of Be/X-ray binaries <i>Waters, L.B.F.M., de Martino, D., Habets, G.M.H.J., Taylor, A.R.</i>	207	Diffuse absorption bands and the 2175 Å feature: results from a sample of galactic stars <i>Benvenuti, P., Porceddu, I.</i>	329
Rotational modulation and flares on RS Canum Vena- ticorum and BY Draconis stars. XIII. IUE spectroscopy and photometry of II Pegasi during September 1986 <i>Doyle, J.G., Butler, C.J., Byrne, P.B., Rodonò, M., Swank, J., Fowles, W.</i>	219	<b>The Sun</b>	
The size distribution of dust particles in a dust-driven wind <i>Dominik, C., Gail, H.-P., Sedlmayr, E.</i>	227	Polarimetry of solar-type stars and magnetic field diag- nostics <i>Leroy, J.L., Le Borgne, J.F.</i>	336
Emission-line stars in the Magellanic Clouds: infrared spectroscopy of B[e] and Ofpe/WN9 stars <i>McGregor, P.J., Hyland, A.R., McGinn, M.T.</i>	237	Non-linear dynamos. I. One-dimensional model of a thin layer dynamo <i>Schmitt, D., Schüssler, M.</i>	343
Activity in late-type stars. IV. The 1980 August 20 flare on Proxima Centauri revisited <i>Byrne, P.B., McKay, D.</i>	241	<b>The solar system</b>	
Towards a self-consistent description of accretion col- umns. III. Radiation pattern and computer-generated pic- tures of the emission region <i>Kraus, U., Herold, H., Maile, T., Nollert, H.-P., Rebetzky, A., Ruder, H., Wolf, K.</i>	246	The puzzling case of asteroid 8 Flora solved <i>Di Martino, M., Zappalà, V., Cellino, A., Barucci, M.A., Harris, A.W., Young, J.W., Zeigler, K.</i>	352
Towards a self-consistent description of accretion col- umns. IV. Iterative scattering solution of radiative transfer and effects of bulk motion <i>Maile, T., Bock, U., Herold, H., Rebetzky, A., Ruder, H., Ventura, J., Wolf, K.</i>	251	<b>Celestial mechanics and astrometry</b>	
<b>Diffuse matter in space (including H II regions and planetary nebulae)</b>		Planetary orbits in the elliptic restricted problem. II. The Sirius system <i>Benest, D.</i>	361
The high density molecular cores near L1551-IRS5 and B335-FIR <i>Menten, K.M., Harju, J., Olano, C.A., Walmsley, C.M.</i>	258	<b>Physical and chemical processes</b>	
		Inferences concerning water vapour viscosity and mean free path at low temperatures <i>Crijo, J.F.</i>	365
		Simulations of the flux contours of astrophysical jets <i>Zaninetti, L.</i>	369

**Abstracts of articles which have been published in  
A. & A. Suppl. Ser. 79, No. 2, 79, No. 3, and 80, No. 1**

Spectroscopy and deep photometry of Pal 3 and C0422-213

*Orotolani, S., Gratton, R.G.* 375

A numerical survey of relativistic rotating neutron star structures using the Hartle-Thorne formalism

*Thomas, J.M.* 375

Five-colour optical photometry of AE Aquarii

*van Paradijs, J., Kraakman, H., van Amerongen, S.* 375

Line calibrators at  $\lambda = 1.3, 2$  and  $3$  mm

*Mauersberger, R., Guélin, M., Martín-Pintado, J., Thum, C., Cernicharo, J., Hein, H., Navarro, S.* 376

Light variations of massive stars ( $\alpha$  Cygni variables). IX

*van Genderen, A.M., Bovenschen, H., Engelsman, E.C., Goudfrooy, P., van Haarlem, M.P., Hartmann, D., Latour, H.J., Ng, Y.K., Prein, J.J., van Roermund, F.H.P.M., Röttgering, H.J.A., Steeman, F.W.M., Tjinhof, W.* 376

A celestial reference frame based on extragalactic radio sources

*Walter, H.G.* 376

Isophotal twisting in isolated elliptical galaxies

*Fasano, G., Bonoli, C.* 377

Wavelengths, oscillator strengths and transition probabilities of the  $H_2$  molecule for Lyman and Werner systems

*Abgrall, H., Roueff, E.* 378

A catalogue of VLA radio continuum observations of planetary nebulae with the Very Large Array

*Zijlstra, A.A., Pottasch, S.R., Bignell, C.* 378

The winds of O-stars. I. An analysis of the UV line profiles with the SEI method

*Groenewegen, M.A.T., Lamers, H.J.G.L.M.* 378

Measurements of visual double stars made at Pic-du-Midi and Nice

*Couteau, P.* 379

Multifrequency observations of the tailed radio source NGC 4869 in the Coma cluster

*Dallacasa, D., Feretti, L., Giovannini, G., Venturi, T.* 379

Light variations of massive stars ( $\alpha$  Cygni variables). X. The F type supergiants G266 = HDE271182 = R92

and G322 = HDE269612 in the LMC

*van Genderen, A.M., Hadiyanto Nitihardjo, G.* 379

A bibliography of colour magnitude diagram studies of star clusters in the Magellanic Clouds

*Sagar, R., Pandey, A.K.* 379

A search for line profile variability in dwarfs and giants of spectral types B8-B9.5. I. Observations and measurements

*Baade, D.* 380

Search for H $\alpha$  emission line galaxies

*Rego, M., Zamorano, J., González-Riestra, R.* 380

Erratum: Spectroscopy of poorly known northern dwarf novae. Part I

*Bruch, A.* 380

Erratum: Star counts and IRAS sources in southern dark clouds

*Gregorio Hetem, J.C., Sanzovo, G.C., Lépine, J.R.D.* 380

Visibility of Io's occultations in 1991

*Arlot, J.-E., Rocher, P.* 381

The IUE spectral atlas of two normal B stars:  $\pi$  Ceti and  $\nu$  Capricorni (125-198 nm)

*Artru, M.-C., Borsenberger, J., Lanz, T.* 381

Catalogue de vitesses radiales moyennes stellaires (catalogue sur bande magnétique)

*Barbier-Brossat, M.* 381

Empirical temperature calibrations for early-type stars

*Gulati, R.K., Malagnini, M.L., Morossi, C.* 382

Confirmation of the Galactic Thick Disk Component by the Basle *RGU*- and *UBV*-photometric space densities (Synopsis of 25 years Basle Halo Program. III. [*RGU* + *UBV*]: SA 82, SA 133, SA 57, SA 54)

*Fenkart, R.* 382

Optical spectroscopy of 1 Jy BL Lacertae objects and flat spectrum radio sources

*Stickel, M., Fried, J.W., Kühr, H.* 383

The variable Herbig Ae star HR 5999. IX. Variability in the UV shell lines

*Blondel, P.F.C., Tijn A Djie, H.R.E., Thé, P.S.* 383

Strömgren and H $\beta$  photometry of stars earlier than G0 in 5 areas containing high latitude molecular clouds

*Franco, G.A.P.* 383